

## Human colon epithelial cells

hTERT and cdk4 immortalized

*HCEC-1CT*

Good experiments start with the right choices – hTERT immortalized cell lines retain the cell-type specific phenotype while constantly growing. No more lot-to-lot variability. No more growth arrest.

Just the perfect choice!

# Human colon epithelial cells (HCEC-1CT)

Colon epithelial cells cover the inner layer of the mucosa in the large intestine of the gastrointestinal tract. These cells form an impermeable barrier through the expression of tight junctions, show transport functions and contribute to the mucosal immune system. *In vitro*, the cells are frequently applied to study drug/nutrient absorption, drug-induced toxicity on the intestinal barrier or to study paradigms of colorectal cancer progression.

## \_in a nutshell

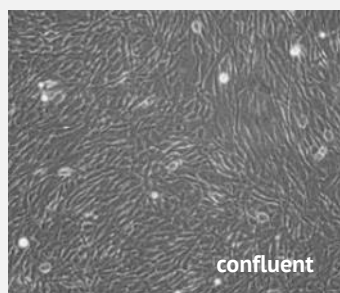
- Original tissue: **human colon tissue biopsy**
- Developed in the **Shay/Wright lab at UT Southwestern** (Roig et al. 2010)
- Transduction of **epithelial cells** with retrovirus carrying **CDK4** and the **catalytic subunit of human telomerase, (hTERT)**
- Expression of cell-type specific markers **A33, mucin 1 and villin** in differentiated cells
- Formation of **cyst-like structures** upon 3D-differentiation

Colon cancer models available upon request!

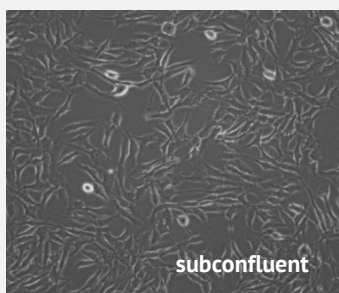
## \_cell-type specific characteristics

### ► Continuous growth *in vitro*

The cell line was continuously cultured for more than 200 population doublings without showing signs of growth retardation so far or replicative senescence (Roig et al. 2010). The population doubling of HCEC-1CT is 18-24 hours.



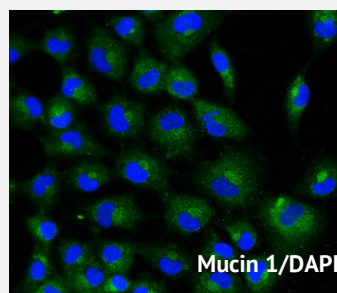
confluent



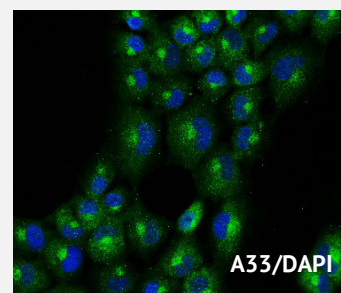
subconfluent

### ► Morphology of undifferentiated cells

HCEC-1CT cells are characterized by a cuboidal to elongated morphology in confluent and subconfluent monolayer cultures.



Mucin 1/DAPI



A33/DAPI

### ► Marker Expression

HCEC-1CT cell line shows expression of typical markers of colon epithelial cells such as mucin and A33 upon induction of differentiation.

## \_applications

- Modelling of cancer progression *in vitro* (2D or 3D)
- Study drug/nutrient absorption and response
- Suitable model for drug-induced toxicity testings on the intestinal barrier



## \_adherence to GCCP-Standards!

Evercyte is committed to follow the principles of Good Cell Culture Practice (GCCP, Coecke et al., 2005). Therefore, our cell lines are:

- ✓ **established following ethical standards** (approved by IRB in accordance with the Declaration of Helsinki)
- ✓ **quality tested** (sterility, absence of specific human-pathogenic viruses, STR-profile, longevity)
- ✓ **characterized for expression of cell type specific markers and functions**

## \_references

Roig A. et al. Gastroenterology, 2010. PMID: 19962984 • Thorne CA. et al. Nat Chem Biol 2014. PMID: 25402767 • Eskiocak B. et al. Biochemistry 2014. PMID: 24999922